

AT Cases

Here are the images I used at our meeting on Thursday. We did five correlation tests, each of which was computed between the PFT values and image metrics from

1. expiration of whole lung — (*_whole_exp.jpg)
2. inspiration of whole lung — (*_whole_insp.jpg)
3. inspiration of whole lung minus expiration of whole lung — (*_whole.jpg)
4. Jacobian from the registration — (*_jac.jpg)
5. the PFT value themselves — (*_self.jpg)

For each test, we computed the correlation value and the p test value (using Matlab corrcoef). rho_*.jpg shows the correlation value and p_*.jpg shows if the p value is smaller than 0.01 (yes if in red and no if in blue).

One more clarification is about the 3rd test. This is correlated with (the value from expiration image metrics - the value from inspiration image metrics), not with the value from the differencing image of inspiration and expiration.

Also, volume.jpg plots the FVC value and the value of the segmentation volume of inspiration subtracted by the one of expiration volume. This plot shows the correlation from the left-top grid in *_whole.jpg.

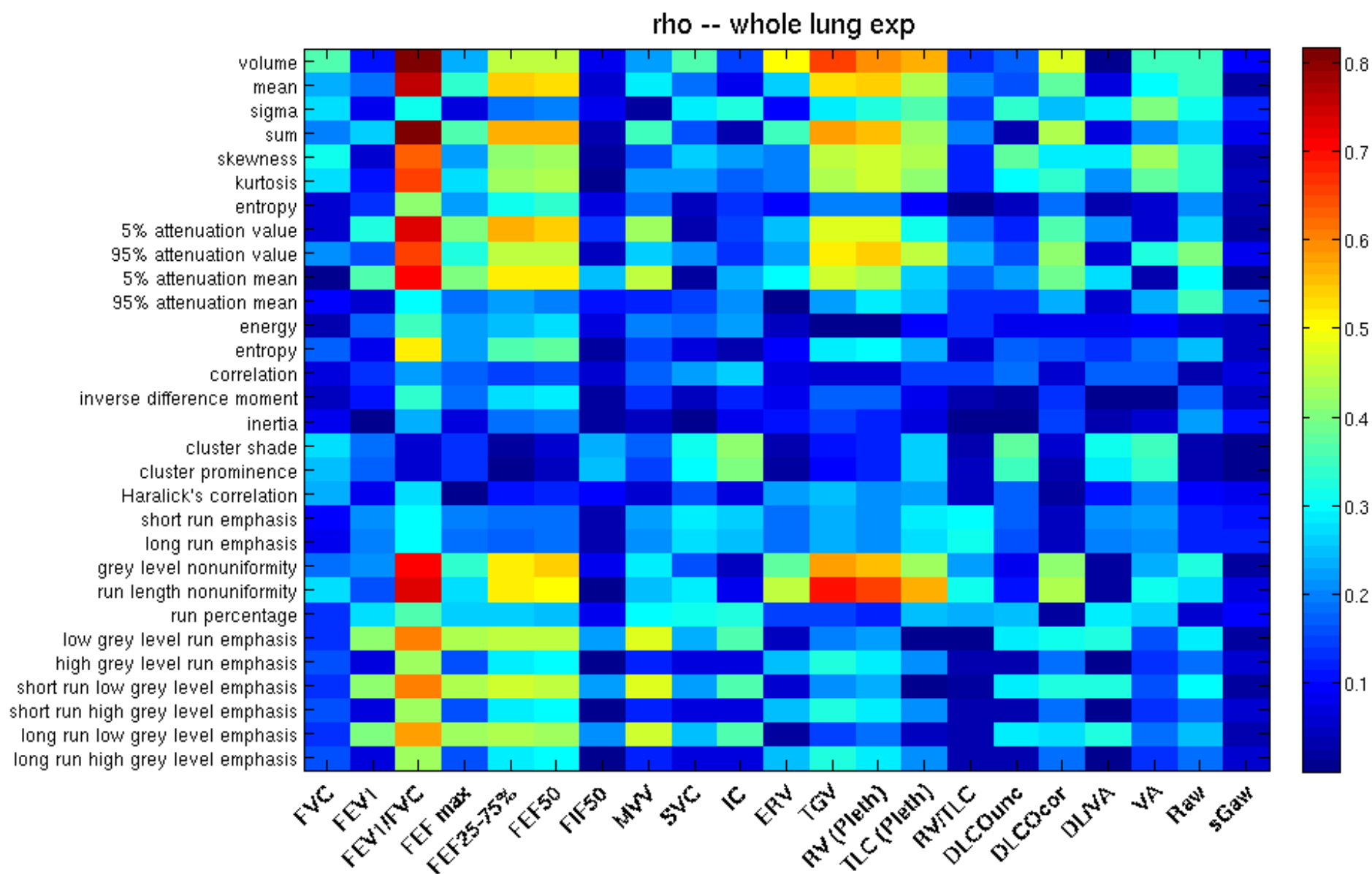


Figure 1: rho_whole_exp. PFT correlated with lung expiration, rho value.

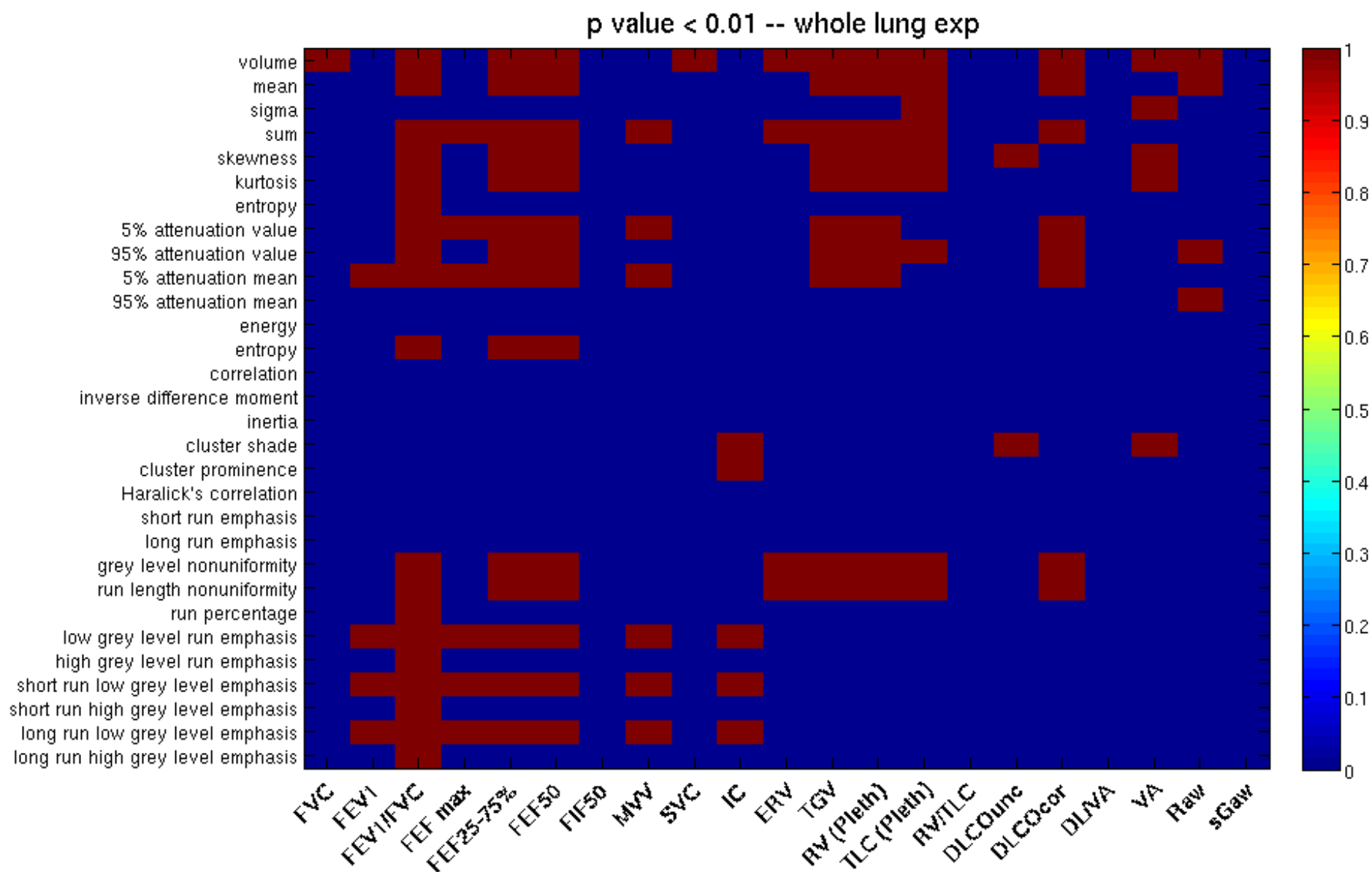


Figure 2: p_whole_exp. PFT correlated with lung expiration, p value < 0.01.

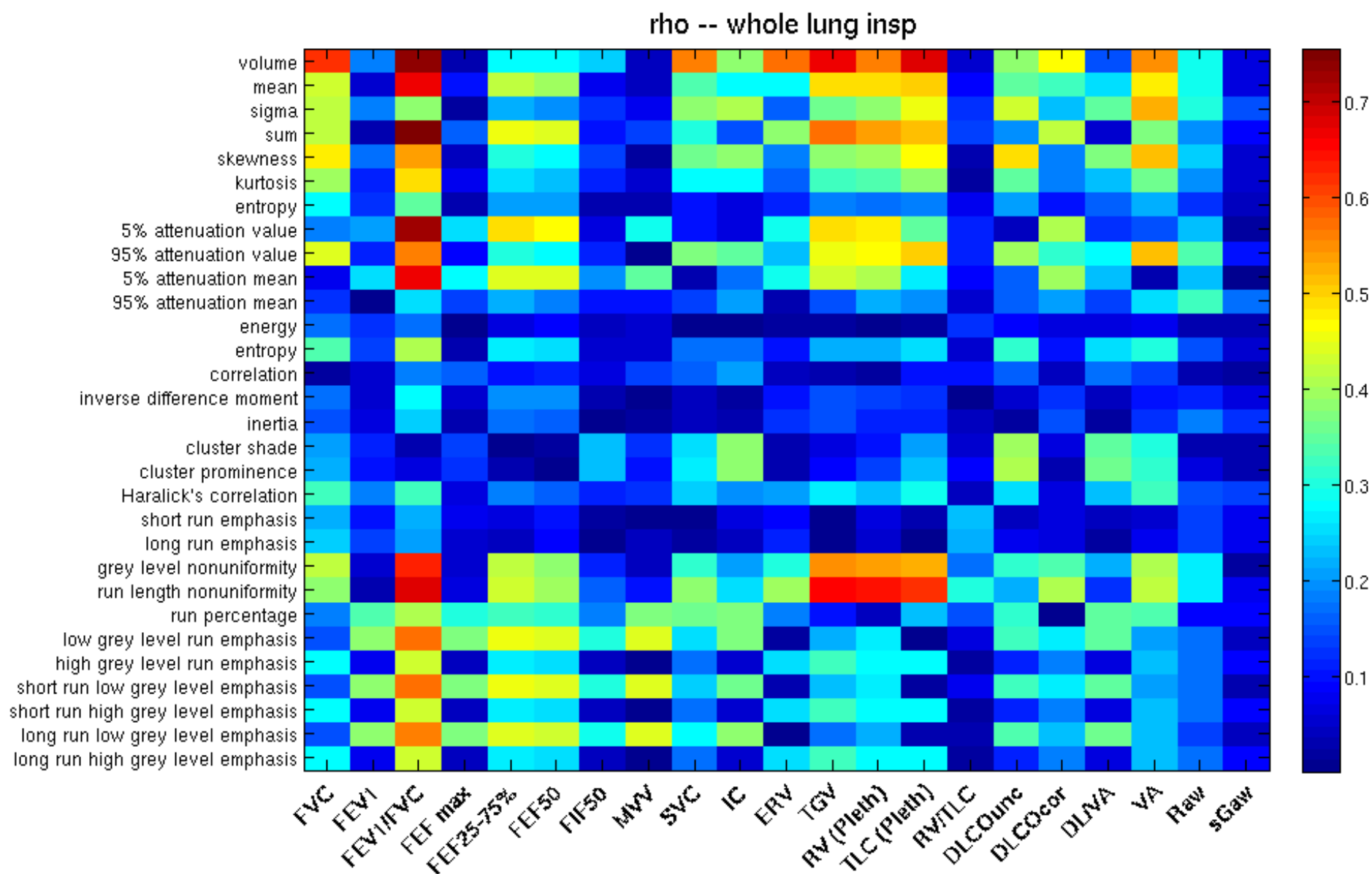


Figure 3: rho_whole_insp. PFT correlated with lung inspiration, rho value.

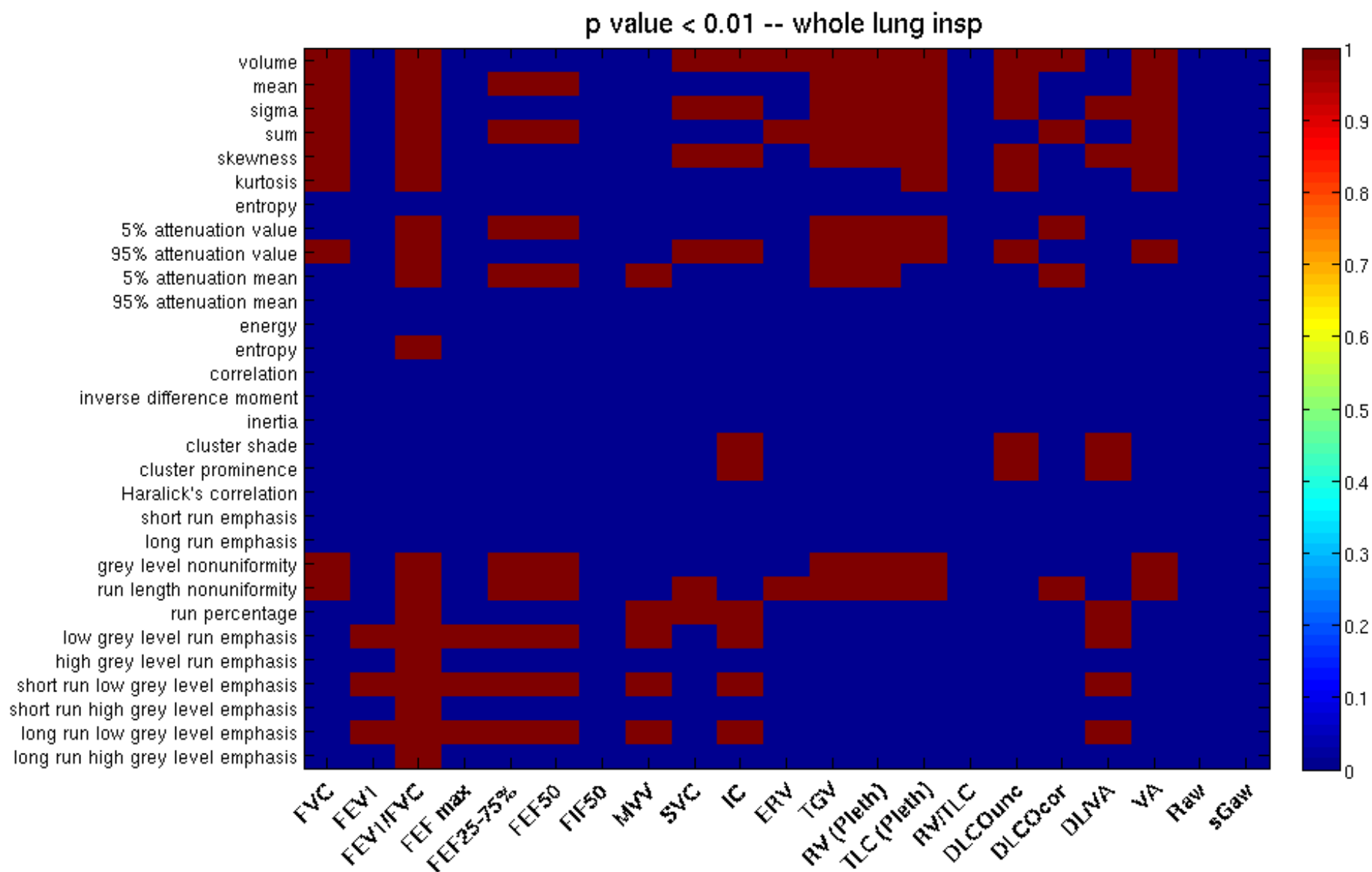


Figure 4: p-whole.insp. PFT correlated with lung inspiration, p value < 0.01.

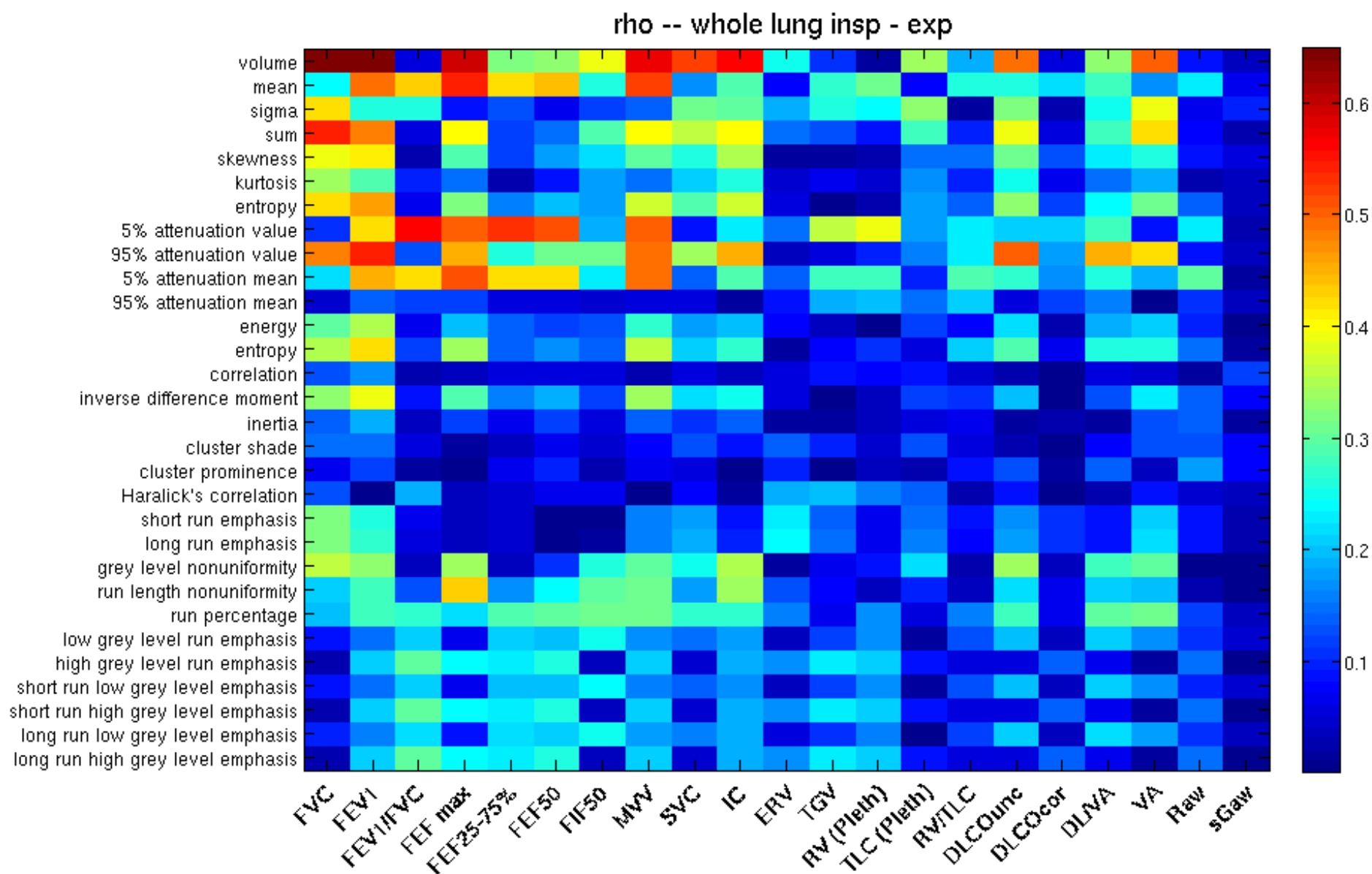


Figure 5: rho_whole. PFT correlated with lung inspiration metrics minus expiration metrics, rho value.

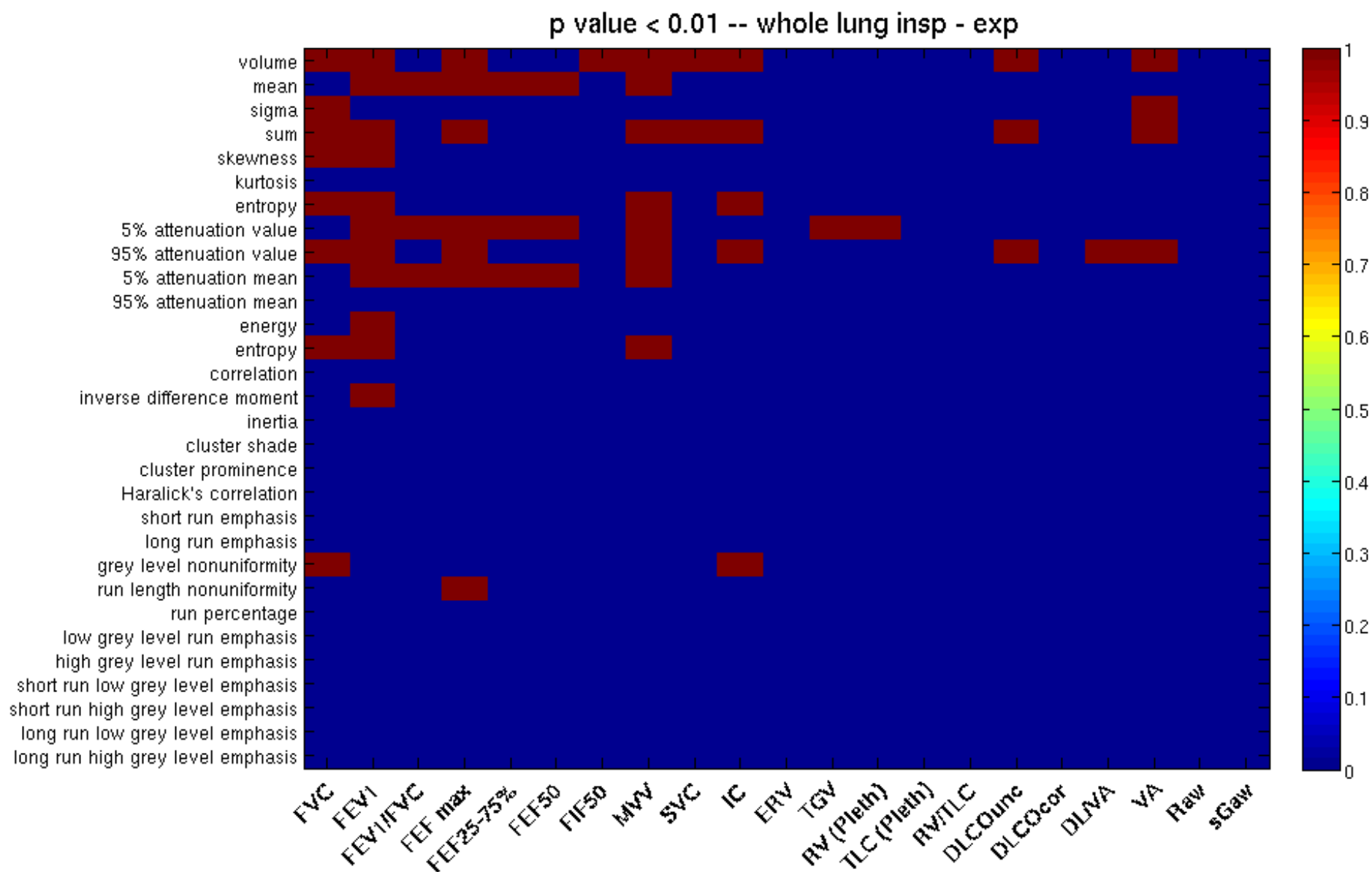


Figure 6: p-whole. PFT correlated with lung inspiration metrics minus expiration metrics, p value < 0.01.

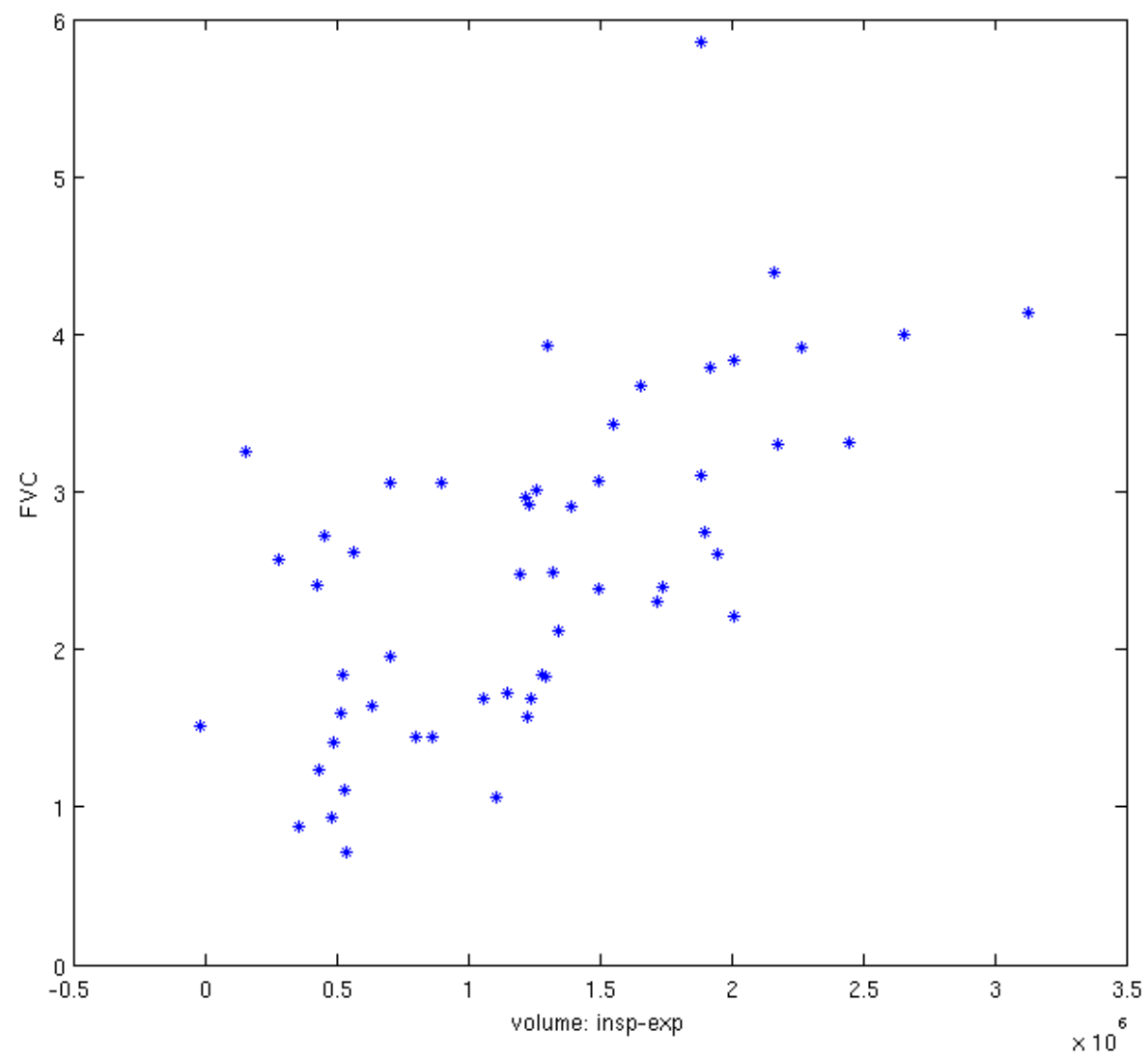


Figure 7: volume. FVC versus segmentation volum of lung inspiration minus volume of expiration.

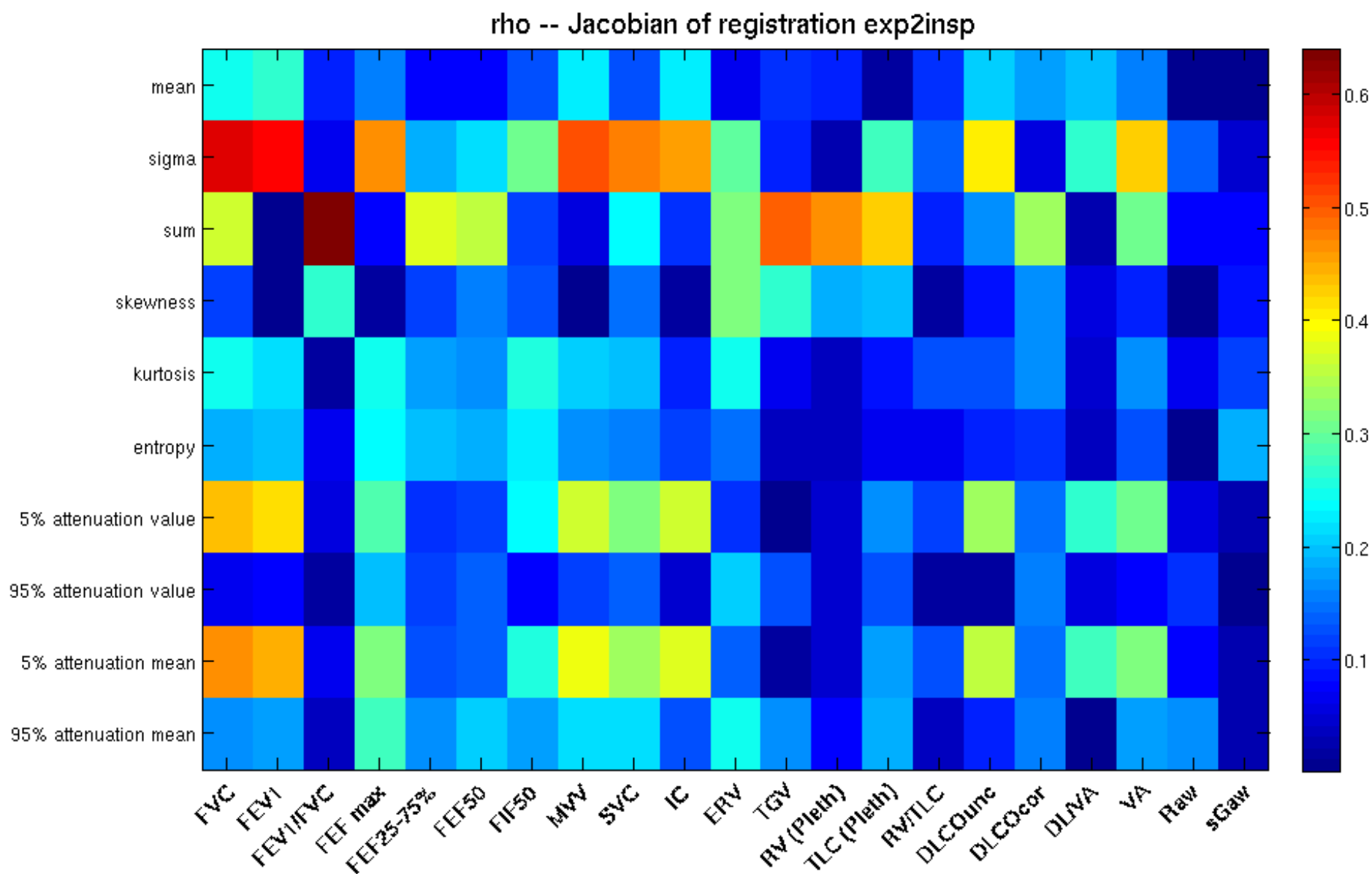


Figure 8: rho_jac. PFT correlated with Jacobian of lung registration, from expiration to inspiration, rho value.

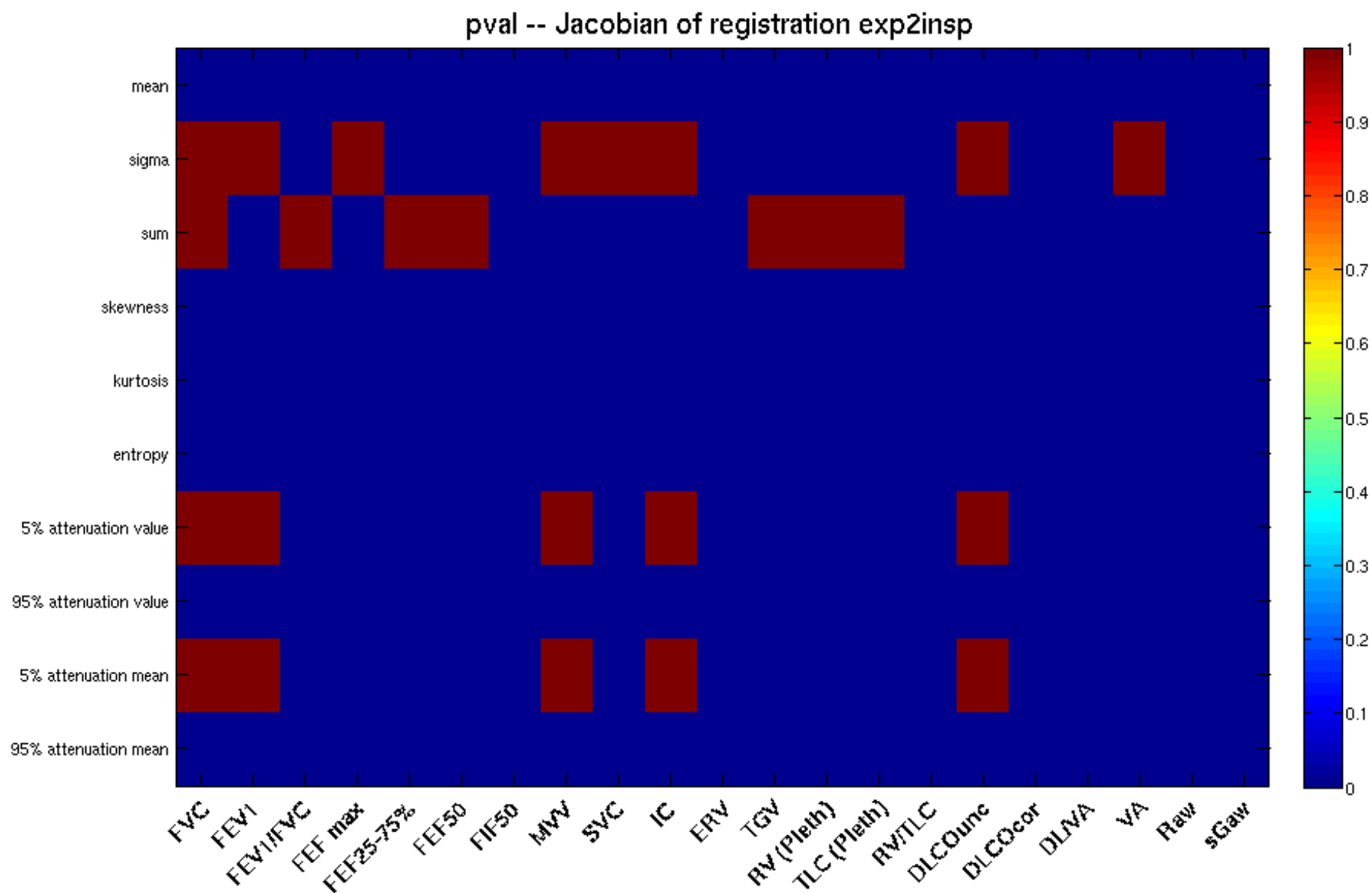


Figure 9: p_jac. PFT correlated with Jacobian of lung registration, from expiration to inspiration, p value < 0.01.

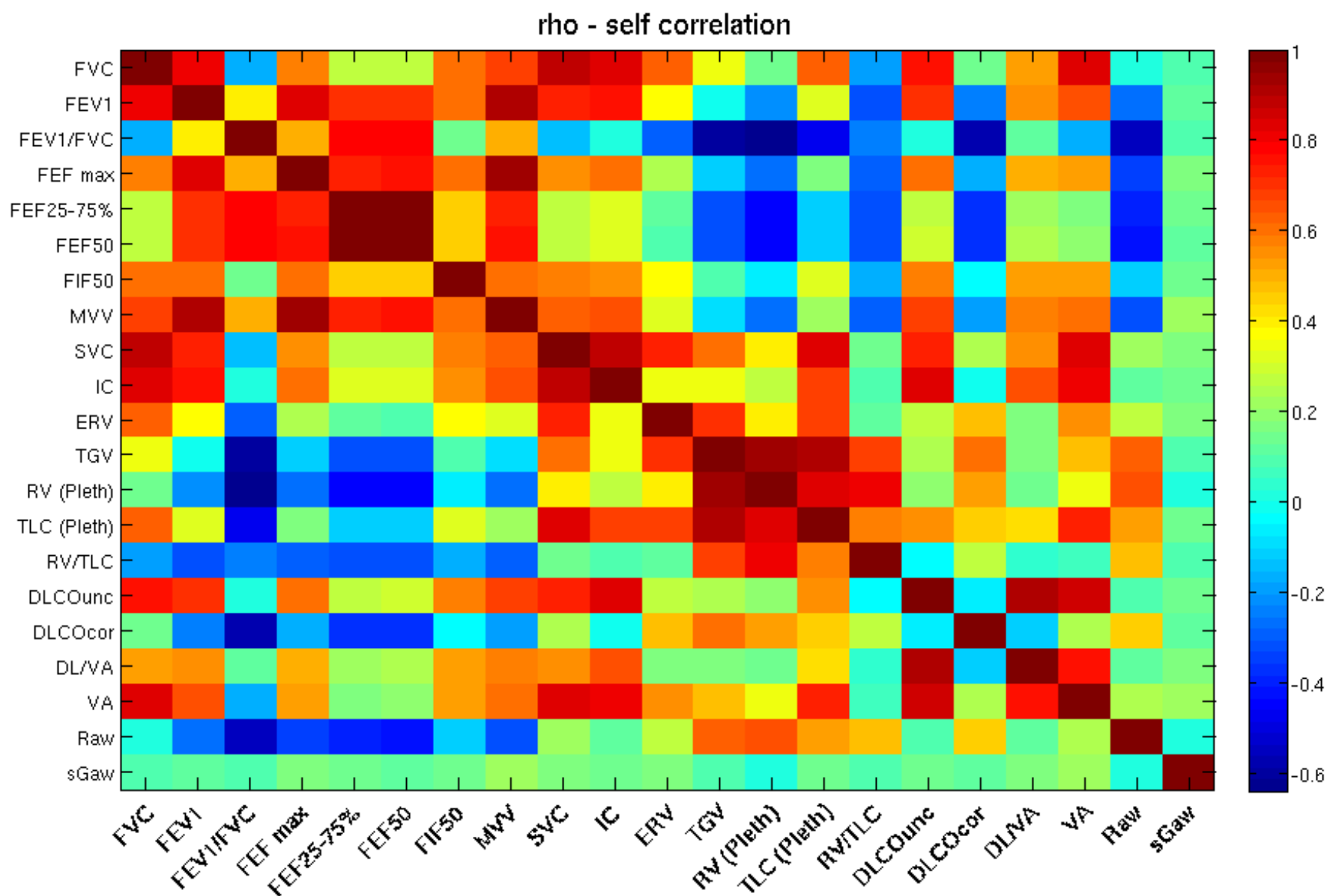


Figure 10: rho.self. PFT correlated with PFT, rho value.

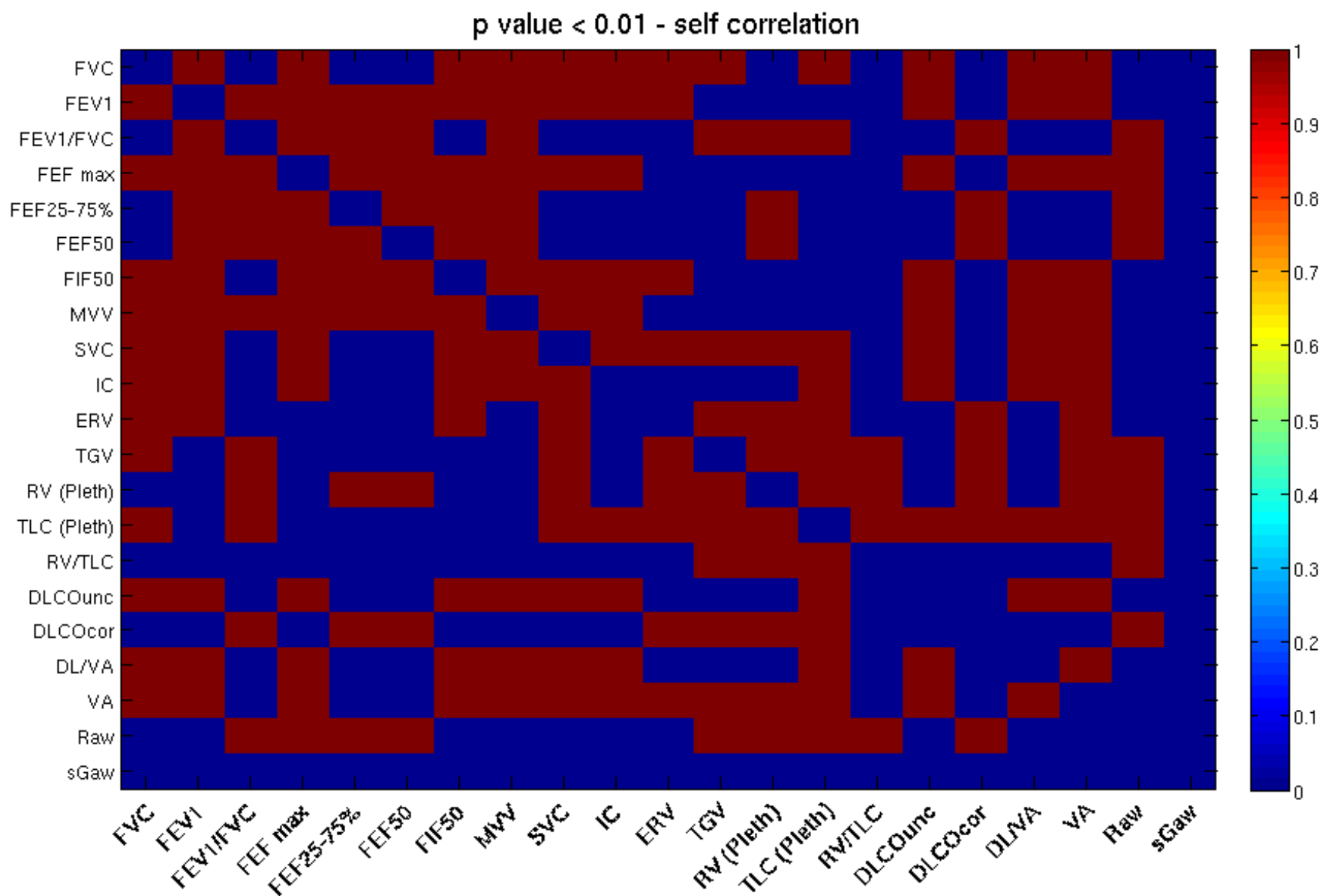


Figure 11: p.self. PFT correlated with PFT, p value < 0.01.